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February 7, 2002

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
445 12th Street SW
Washington DC 20554

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FEB 07 2002

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Re: ET Docket No. 98-153 - Revision of Part 15 of the Commission's
Rules Regarding Ultra-Wideband Transmission Systems
Ex Parte Communication

Dear Mr. Caton:

Pursuant to Section 1.1206(a)(2) of the Commission's rules and on behalf of XtremeSpectrum, Inc., I am filing this letter to report an oral ex parte communication in the above-referenced proceeding.

Earlier today, Mitchell Lazarus of Fletcher, Heald and Hildreth, P.L.C., and I met with Susan Steiman in the Office of General Counsel to discuss general legal jurisdictional issues and principles relating to the respective roles of the FCC and the National Telecommunications and Information Administration in rulemaking proceedings involving spectrum. We also discussed XtremeSpectrum's participation in this proceeding and provided the attached materials that have been filed previously in this docket.

An original and one copy of this letter is submitted for inclusion in the proceeding record. If there are questions about this submission, please call me at the number above.

Respectfully submitted,



Michele C. Farquhar
Counsel for XtremeSpectrum, Inc.

Enclosures
cc: Susan Steiman

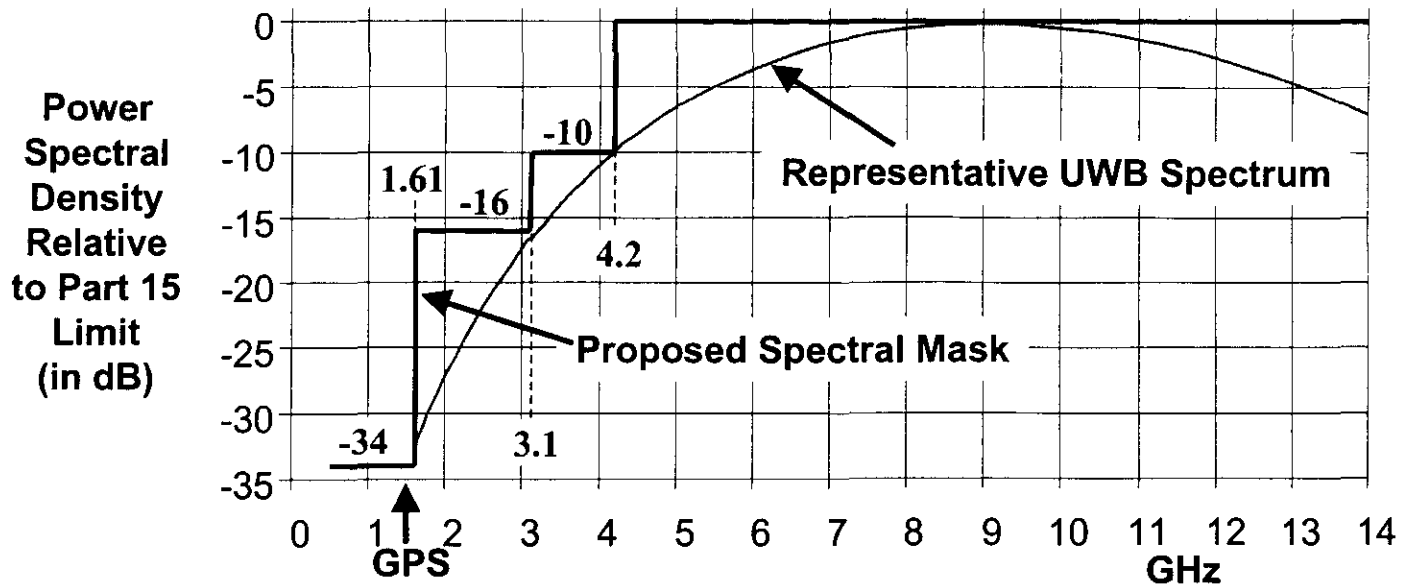
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LCLABODE

XtremeSpectrum Summary



XtremeSpectrum

■ XtremeSpectrum proposed UWB levels



■ These levels are proven safe for all applications

- Peer-to-peer, indoor & outdoor, patios and balconies, 2 and 30 meter elevation
- No intentional emissions below 4.2 GHz (if needed)

■ Key elements of XtremeSpectrum proposed rules

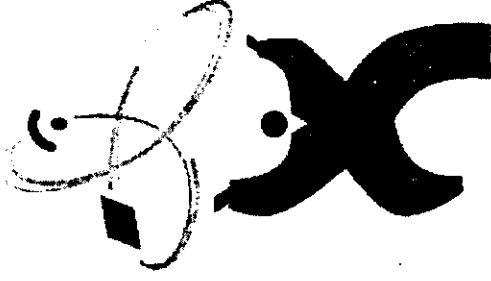
- No mast or pole mounted UWB devices
 - Devices are indoors, on a patio or rooftop or on the ground
 - UWB will go where computers go—and must be safe!
- No automatic peer-to-peer
 - Must be deliberately initiated by the user

■ NTIA protection criteria satisfied

- Only NTIA criteria used
- All NTIA supplied data, measurements & methodologies accepted
- NTIA used Interference/Noise (I/N) criteria from ITU-R
 - Widely accepted ITU-R Recommendation
 - I/N criteria for radionav vetted in ITU-R SG 8 and accepted by FAA
- U.S. government radar system siting policies accepted



XtremeSpectrum



XtremeSpectrum

An Ultrawideband Technology Company

January 30, 2002

Company Overview



XtremeSpectrum

-
- Founded Q4 '98 by recognized experts in UWB technology and radar applications
 - Management team on-board, with in-depth technology and business experience in communication IC industry (design, manufacture and marketing)
 - Partners and customers include industry leaders in consumer electronics, computing and networking
 - Investors include Cisco Systems, Motorola, Texas Instruments, Alliance Technology Ventures, Granite Ventures and Novak Biddle Venture Partners.
 - First generation product development nearing completion
 - Headquartered in Vienna, VA with Silicon Valley office in Mountain View, CA
 - *Product launch tied to regulatory approval*
-

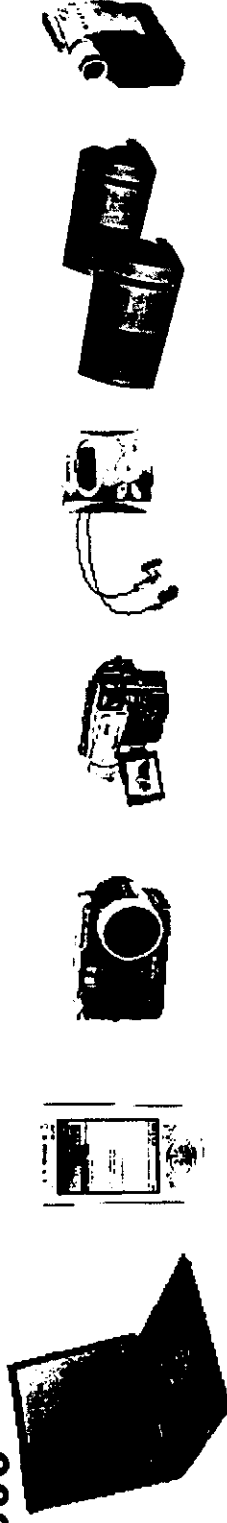
Market Drivers



- The world is going wireless ...



- The market for wireless devices will exceed 3B units by 2006



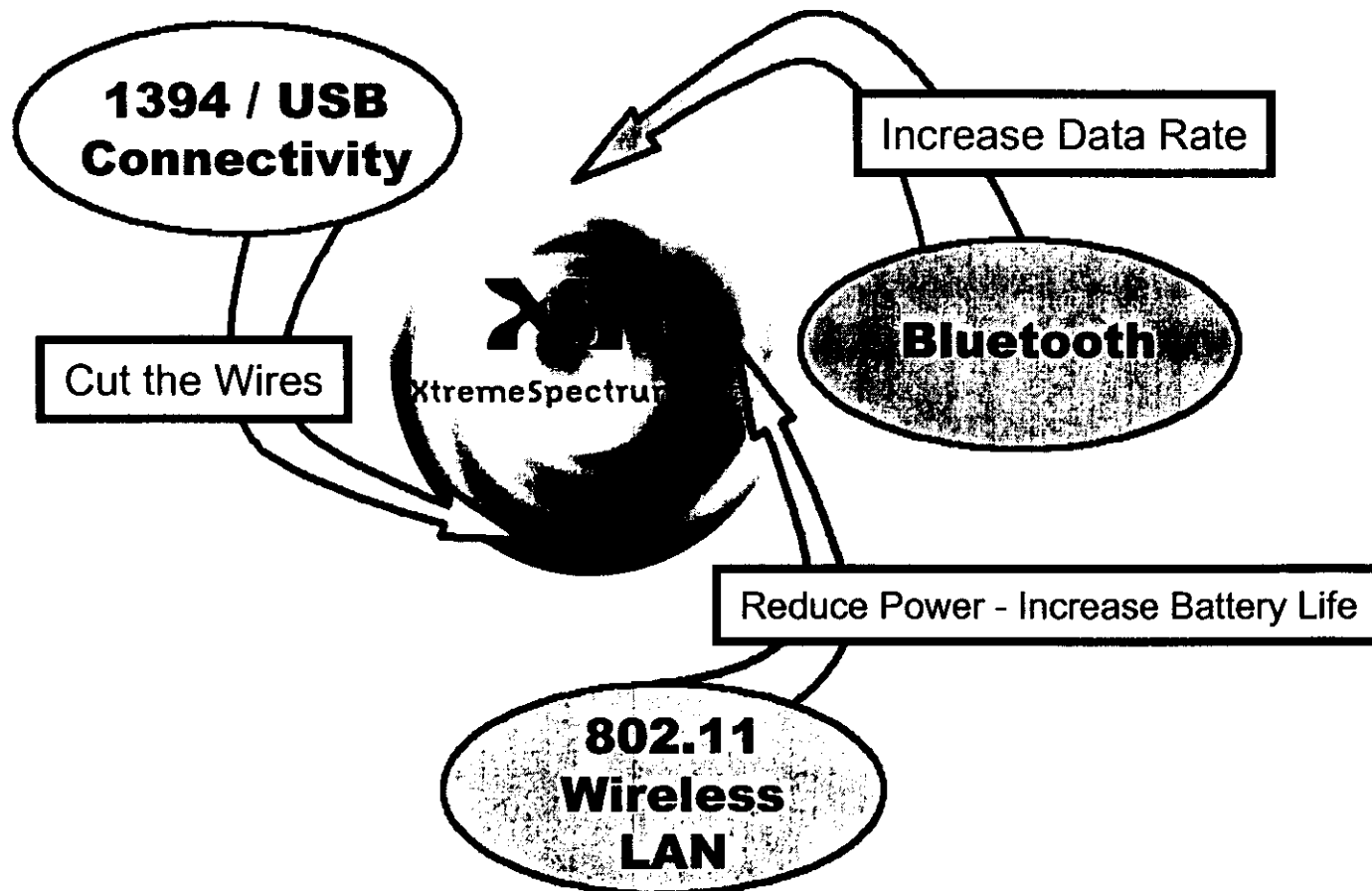
***Media Rich Handheld Devices Must
Connect to the Network***

***XtremeSpectrum Simultaneously Delivers
High Data Rate, Low Power Consumption, and
Low Cost***



XtremeSpectrum

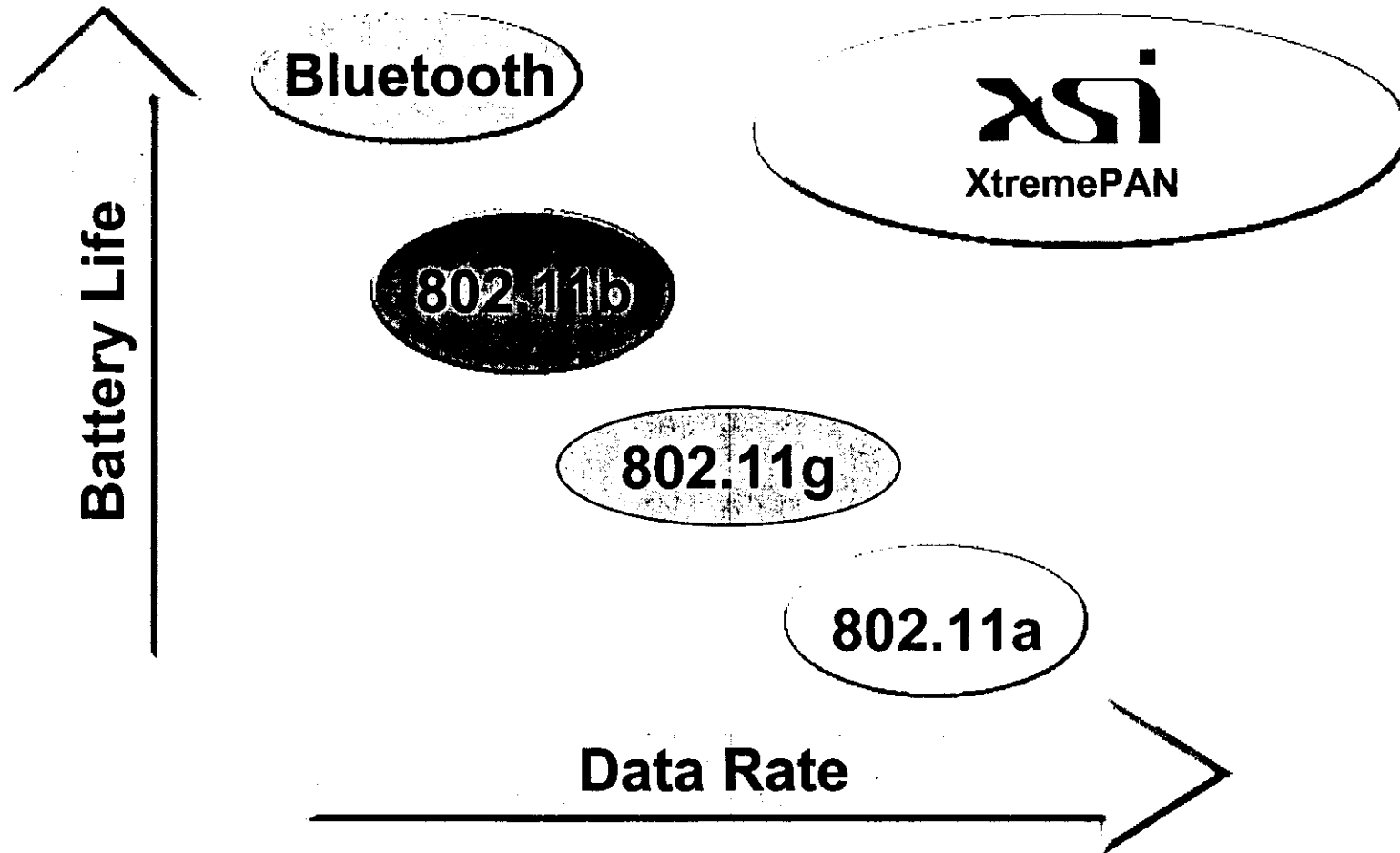
Reducing the Performance Differences between the Wireless and Wired Worlds for Consumer Media-Intensive Devices



Importance in the Marketplace



XtremeSpectrum

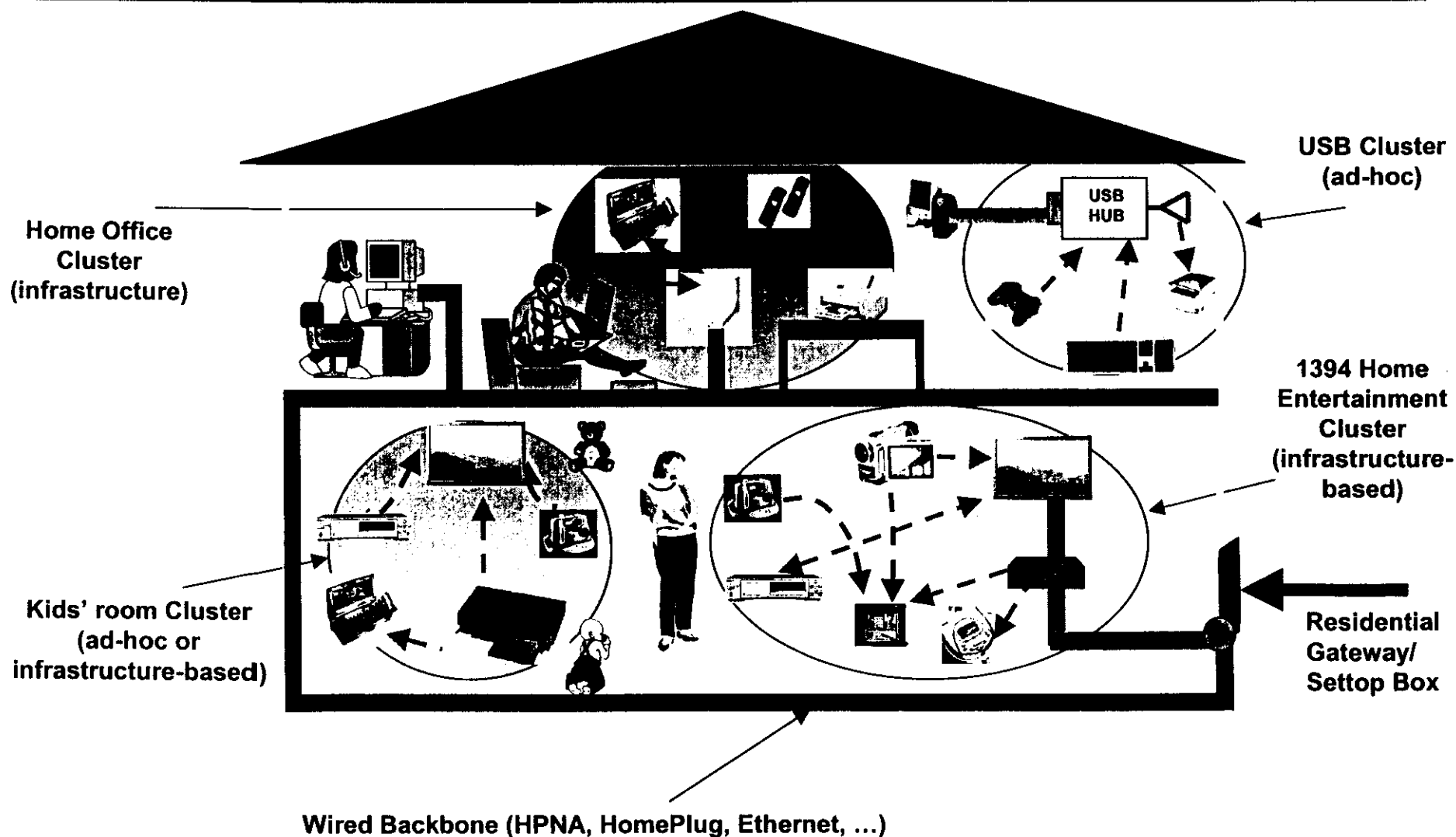


Order of Magnitude Speed X Power Advantage

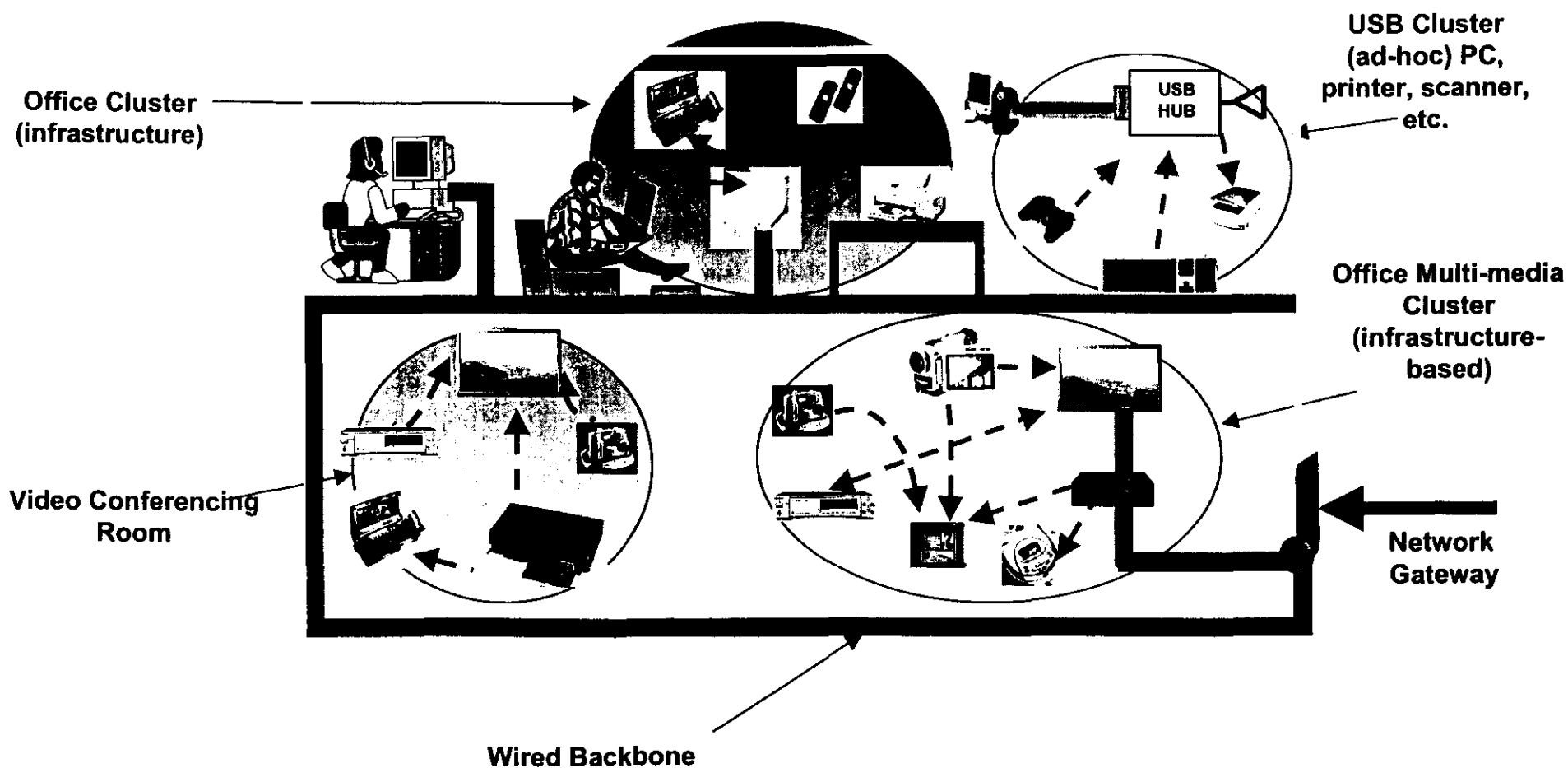
Our Vision: The Wireless Networked Home



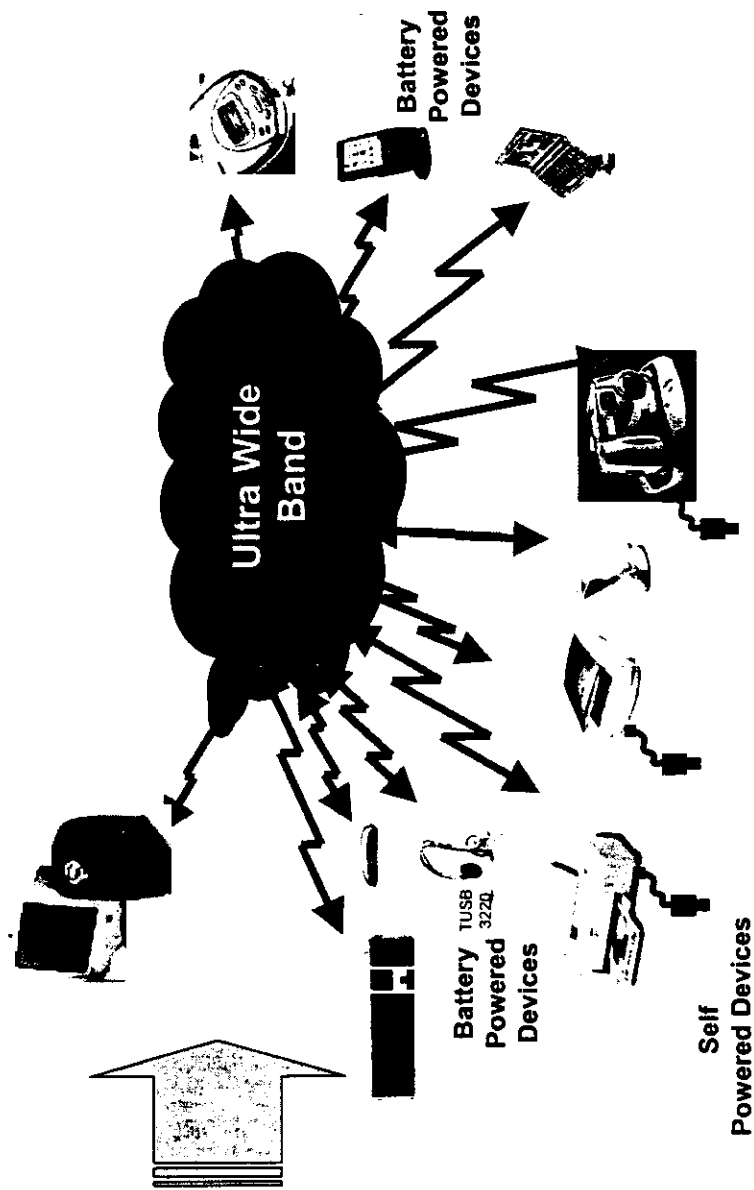
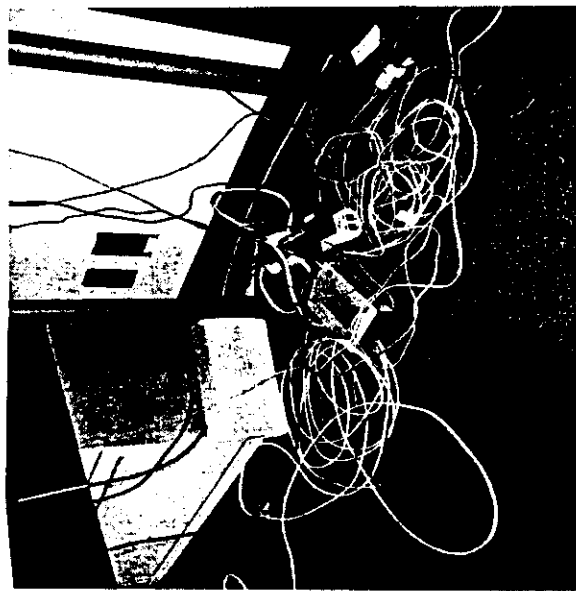
XtremeSpectrum



Our Vision: The Wireless Office



Applications: Reducing the Rat's Nest of Wires in the Office



Applications: Transportation-Related



XtremeSpectrum



- Automotive Radars (collision avoidance and collision mitigation)



- Infrastructure Integrity Measurement



- Highway Inspection, Development and Construction



- Airport and Transportation Facilities Security



- Intelligent Transportation Systems (toll booth collection, traffic warning systems)

Applications: National Security & Public Safety



XtremeSpectrum

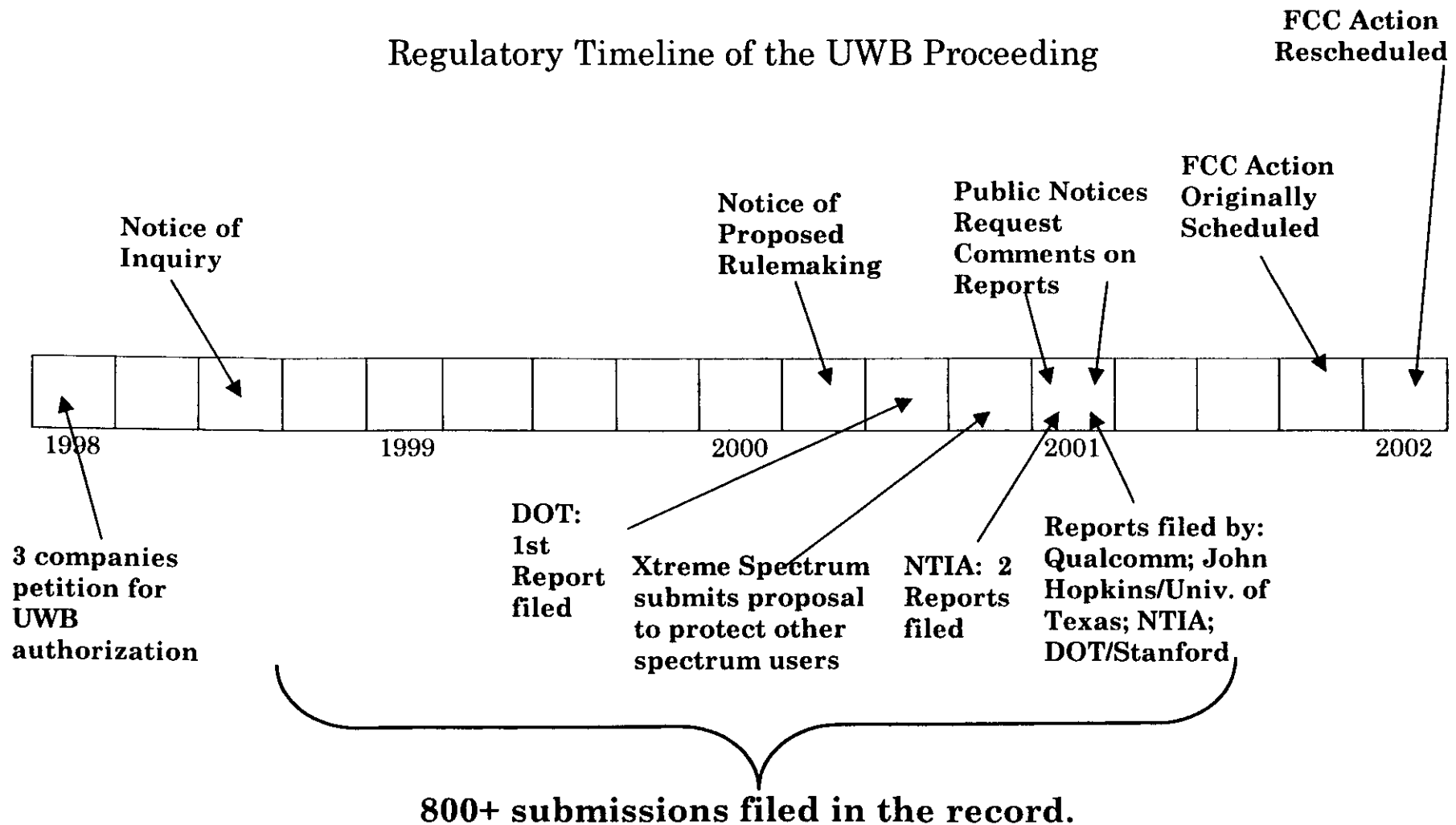
- **Military Surveillance**
- **Port Authority Security**
- **Police Department Equipment**
- **Fire Department Equipment**
- **Postal Service Security**
- **E911 Management**

Regulatory Review Has Been Long and Thorough



XtremeSpectrum

Regulatory Timeline of the UWB Proceeding



All Proposals Require Tougher UWB Limits than for other Part 15 Devices



XtremeSpectrum

■ **The FCC's UWB NPRM proposed:**

- to apply the "default" Class B limit to UWB operations above 2 GHz
- to require a 12 dB reduction below the Class B limit for operations below 2 GHz, where GPS, PCS and certain Government systems operate

■ **XtremeSpectrum has proposed even stricter limits.**

- The following slides detail these limits and additional measures proposed for certain frequency bands to ensure that UWB devices do not cause harmful interference.

■ **The strictest limits are proposed for "peer-to-peer" operations.**

- "Peer-to-peer" refers to communications taking place between two battery-powered UWB devices.
- Tighter limits are appropriate for peer-to-peer operations because they can occur outside, where signals may not be blunted by the presence of walls and furniture.



XtremeSpectrum

RULES

- Set appropriate emission limits
- Ban outdoor infrastructure
- Don't restrict peer to peer
- Give manufacturers multiple regulatory options to maximize flexibility to innovate while protecting existing spectrum users
- XtremeSpectrum will comply with any reasonable set of limits that protects GPS

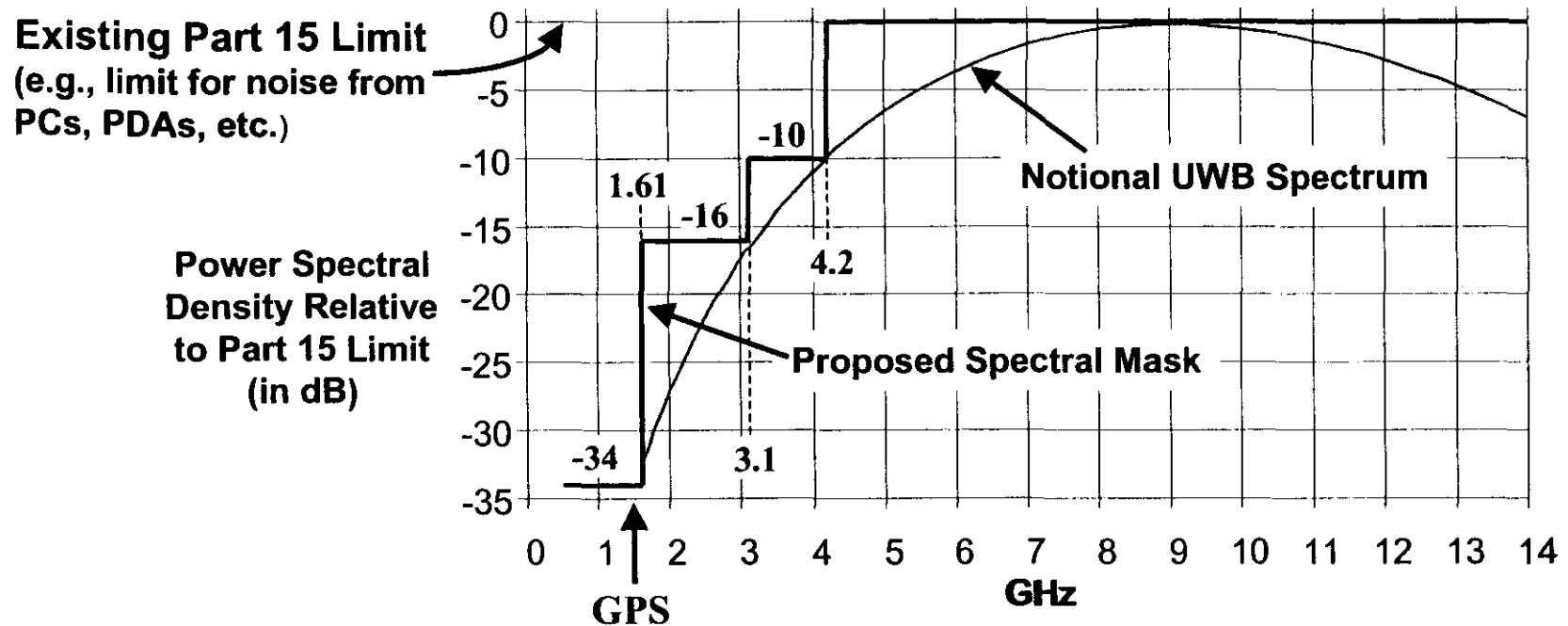
- GPS can be completely protected with a deep notch
- RTCA's conservative analysis asked for -60 dBm/MHz for noise and -70 dBm/MHz for spectral lines
- GPSIC asked for -76.3 dBm/MHz protection for spectral lines (4 times lower power than RTCA)
- The NTIA proposed (we understand) -75.3 dBm/MHz
- XSI filed that it believed these were overly conservative but would not object
- The analysis shows that this level is exceedingly safe

GPS can be protected from outdoor UWB devices, both at ground-level and elevated heights

Proposed Spectral Mask Will Limit UWB Emissions in Sensitive Bands



XtremeSpectrum



- Limits UWB emissions to levels far below those proposed in the NPRM
- This proposal limits UWB emissions consistent with demands by all parties in the FCC proceeding, *including GPSIC and NTIA*



XtremeSpectrum Proposal

- **Ban outdoor infrastructure for UWB**
 - no fixed (non-mobile handheld) units outdoors
- **Give manufacturers a choice of compliance options:**
 - 1. Indoors - Operation at modified NPRM levels (-12 dB from Class-B below 2 GHz, -21 dB from Class-B in GPS band), or
 - 2. Mobile peer-to-peer operation at greatly reduced emissions levels (see below) and only when affirmatively initiated by the user (i.e., no automatic peer-to-peer operation)
- **For peer-to-peer operation under option (2)**
 - we suggest the following emissions limits, which we understand have been proposed by NTIA for all UWB operation, including outdoors, which are considerably more stringent than the FCC's proposal:
 - 960-1610 MHz 34dB below Sec. 15.209(a) levels
 - 1610-3100 MHz 16dB below Sec. 15.209(a) levels
 - 3100-4200 MHz 10dB below Sec. 15.209(a) levels
 - Above 4200 MHz Section 15.209(a) levels
 - *(While the record does not justify limits tighter than Sec. 15.209(a) values in the 3100-4200 MHz band, XtremeSpectrum will accept this limit if necessary to resolve a ban on peer-to-peer)*

UWB Companies MUST have products that don't interfere



■ Good Business Practice

UWB Manufacturers could not stay in business if their products interfered with other radio services

■ UWB will coexist with GPS and PCS in portable devices

- Main Driver for Consumer Devices—Cell phones and PDAs
 - Networking capability is the driving force
 - UWB based networking cannot sacrifice connection to GPS and 3G
- Main Driver for National Security and Public Safety applications
 - GPS again.

Technical Presentation Shows



XtremeSpectrum

-
- **No Peer-to-Peer Restrictions are needed**
 - **A Simple Restriction On Tower Mounted UWB Devices is Plenty**
 - Sound technical analysis supports that a spectral mask provides all the needed protection to allow UWB devices to operate outdoors.
 - **Outdoor UWB at any height and scenario is safe for GPS**
 - Numerous reports and studies present a consistent picture of the interference mechanisms of UWB on GPS receivers
 - The 35 dB down from Class-B accomplishes the needed protection
 - **Outdoor Class-B UWB at any height is safe for nearly all systems studied in NTIA report**
 - Assumptions that changed will be highlighted in following slides
 - **Aggregation is not a factor**
 - Numerous reports and studies present a consistent picture showing the cumulative effects of multiple UWB devices are dominated by closest emitters
 - Experience from PC's is that aggregation is not an issue.
 - **Emissions and Aggregation from a PC are representative**
 - UWB signals are similar from those of PC's and other typical radio signals.
 - If a device is not bothered by PC's, then it won't be bothered by UWB
-



XtremeSpectrum

XtremeSpectrum Summary

- **US has UWB lead. Expeditious action is required to ensure and protect US leadership in this innovative wireless technology.**
 - UWB simultaneously delivers high data rate and low power consumption at low cost to enable wireless media-intensive consumer electronics, security and public safety applications.
 - Government and public safety users will benefit from innovations, cost reductions and economies of scale of commercial applications.
 - **There is a world-wide effort growing fast**
 - **XtremeSpectrum has met all interference concerns raised in the docket.**
 - Good Business Practice – Customers demand full protection of other radio services, especially for functions in the same device.
 - A ban on peer-to-peer communications to enforce a total ban on outdoor use would significantly undercut utility, innovation and benefits to the economy.
 - **XtremeSpectrum does not seek rules that would hinder other manufacturers.**
 - The FCC should give manufacturers multiple regulatory options, each of which protects existing spectrum users
 - This maximizes opportunities for innovation and competition
-